4.0   FILE QUERY PROCEDURES

This section discusses query capabilities both within and outside of JEPES.

4.1   System Query Capabilities

By selecting the Database Maintenance function, the user can issue queries to look at the database. There are some values and ranges the user must use to facilitate the query. Section 5.3.2 describes the Database Maintenance retrieval operation and Appendix H lists the various JEPES codes that enable a user to query a JEPES table.

4.2   Database

JEPES uses the ORACLE RDBMS to store data. Table 4.2-1 lists the 59 JEPES tables and views. Temporary tables or views are marked with a * prefix. See Appendix D for a detailed description of tables.

4.3   Query Preparation

This subsection discusses how the user may take advantage of the JEPES predefined SQL queries. **Note:** Advanced understanding of the SQL programming language and the JEPES RDBMS is required to use SQL independently.

JEPES execution is built on a series of *.s* files that invoke *.sql* files or *.ctl* files. The *.ctl* files are mainly used to load data from a flat file into existing ORACLE tables. The *.sql* files are called from the menu and used to issue queries to retrieve or update table information. It is not advisable to run these queries individually when they are not in JEPES since they may use a sequence of *.s*, *.ctl*, and *.sql* files, or they may coordinate with the execution of an Ada program. Running them independently may result in lost data (update/delete), mismatched data, or inaccurate retrievals. The following provides information on the use of predefined JEPES SQL queries.

To run a predefined *.SQL query* file, type:

unix prompt> **sqlplus / @**[directory path to desired SQL file]**/**[.sql file name]

ex.: **sqlplus / @JEPES_HOME/sql/nuc.sql**

Table 4.2-1. JEPES Tables (1 of 2)

MENU NAME	ORACLE TABLE NAME	TYPE
	Aggregated_Asset	table
ASSET	Asset	table
	Attrition_Factor	table
	*Avail	table
BACKUP SUPPLY	Backup_Supply	table
BASE COMPLEX	Base_Complex	table
BASE FACILITY CONSTRUCTION POLICY	Base_Fac_Construction_Policy	table
BASE LOCATION	Base_Location	table
	*Base_Sum	table
	Cargo_Aggregation_Period	table
	Climatic_Factor	table
	Component	table
COMPONENT EXCEPTION	Component_Exception	table
	Construction_Capability	table
DEPLOYED UNIT (TROOP)	Deployed_Eng_Sensitive_Unit	table
DESTINATION LOCATION	Destination_Location	table
ENGINEERING SUPPORT	Engineering_Support	table
ENGINEERING UNIT CAPABILITY	Engineering_Unit_Capability	table
EQUIPMENT PLANNING FACTOR	Equipment_Planning_Factor	table
EQUIPMENT TYPE	Equipment_Type	table
FACILITY CATEGORY	Facility_Category	table
FACILITY CATEGORY SUBSTITUTE	Facility_Category_Substitute	table
FACILITY COMPONENT	Facility_Component	table
FACILITY REQUIREMENT	Facility_Requirement	table
GENERAL PLANNING FACTOR	General_Planning_Factor	table
	*Imp_Exp_List	table
	Keys	table
	LOGSAFE_Interface	table
	LSA_Export	table
	LSA_Interface	table
	LSA_Requirement	table
NON UNIT CARGO	Non_Unit_Cargo	table
OPERATION	Operation	table
ORIGINATING LOCATION	Originating_Location	table
	Phase_In_Efficiency	table
PLANNER INPUT REQUIREMENTS	Planner_Input_Requirement	table
PLAN FACILITY CONSTRUCTION POLICY	Plan_Fac_Construction_Policy	table
	*Plan_Sum	table
POD LOCATION	POD_Location	table
POE LOCATION	POE_Location	table
	*Preproj	table
	*Pre_Project	table
	*Pre_Unscheduled_Project	table

Table 4.2-1. JEPES Tables (2 of 2)

MENU NAME	ORACLE TABLE NAME	TYPE
PROJECT	Project	table
	Req_Analysis_Tracking	table
	Scheduled_Project	table
	Skill_Sub	table
	*S_P_Tab	table
	Time_Period	table
UNIT EQUIPMENT	Unit_Equipment	table
UNIT TYPE	Unit_Type	table
	Unscheduled_Project	table
	Usr_Query	table
	Usr_Query1	table
WAR DAMAGE FACTOR	War_Damage_Factor	table
	*Adadata	view
	Geoloc_Tab	view
	*TP_POP	view
	*TP_Rqmts	view
	*V_2I	view

The following predefined queries are available within the JEPES to process reports and graphs:

a.   Requirements Generation

1.   The *req_dmp.sql* query: Creates the report from the Project table for the entire planning area.

2.   The *req_base.sql* query: Creates the report from the Project table for a specific base complex. The user will be prompted to enter the BCN.

b.   Requirements Analysis

1.   The *asstst1.sql* query: Creates the report for all Asset Satisfied Requirements.

2.   The *asstust1.sql* query: Creates the report for all Asset Unsatisfied Requirements.

3.   The *asstst2.sql* query: Creates the report for Asset Satisfied Requirements for specific time/region constraints. Region/time constraints were defined by the Region/Time Constraints screen in the Requirements Analysis section. Refer to the TUG, reference b.

4.   The *asstust2.sql* query: Creates the report for Asset Unsatisfied Requirements for specific time/region constraints. Region/time constraints were defined by

the Region/Time Constraints screen in the Requirements Analysis section. Refer to

the TUG, reference b.

5.   The *cnstr1.sql* query: Creates the report for all Construction Satisfied Requirements.

6.   The *cnstr2.sql* query: Creates the report for all Construction Requirements for the specific time/region constraints. Region/time constraints were defined by the Region/Time Constraints screen in the Requirements Analysis section. Refer to the TUG, reference b.

7.   The *cnstr3.sql* query: Creates the report for all Construction Requirements to be completed within the analysis period.

8.   The *cnstr4.sql* query: Creates the report for all Asset Unsatisfied Requirements for specific region/time constraints. Region/time constraints were defined by the Region/Time Constraints screen in the Requirements Analysis section. Refer to the TUG, reference b.

c.   Non-Unit Cargo

1.   The *nuc.sql* query: Creates Class IV requirements needed to support civil engineering requirements and store into the Non_Unit_Cargo table.

2.   The *logsafe.sql* query: Extracts data from the Non_Unit_Cargo to add to the LOGSAFE_Interface table.

d.   Logistic Sustainability Analysis

1.   The *req_mrg.sql* query: Merges asset satisfied and unsatisfied requirements and adds them to the LSA_Requirement table.

2.   The *v-2i-vw.sql* query: Gathers data used for producing the LSA graphs.

4.4   Control Instructions

The ORACLE tables are initially loaded from the JOPES Core database and the Services' RPI data. They handle only one OPLAN at a time. If the OPLAN is changed, the Dependent tables will need updating. The Independent tables may not need updating. See Section 3.2.2.1

To save the data from the current OPLAN before loading new data, or to reinstate a previous OPLAN, use the JEPES export/import utility, see Section 5.3.1.1.

After any import operation, it is recommended that the new OPLAN, Section 5.3.3, be operated in order to properly set up needed parameters.

5.0   USER TERMINAL PROCESSING PROCEDURES

5.1   Overview of Available Capabilities

JEPES provides the capability to query, add, delete, modify, import, and export the JEPES database; generate requirements for a given OPLAN; and determine whether existing assets can satisfy the requirements and/or whether available engineering resources can construct the remaining unsatisfied requirements. Various reports, spreadsheets, and graphs can be produced. JEPES also generates data for the LOGSAFE and LSA systems.

5.2   Access Procedures

A user must first have a GCCS account. The systems administrator then needs to add the new user to JEPES. Adding a new user will do the following:

 a. Alter the user's default tablespace to be JEPES_DATA tablespace;
 b. Grant the user select privileges to the following JOPES Core database tables:
    1. Geographic_Location
    2. Oplan
    3. Oplan_Force_Rqmt
    4. Oplan_Force_Rqmt_Loc
    5. Unit_Type
    6. Unit_Type_Cargo_4th
    7. User_Oplan_Permission
 c. Create JEPES tables, indices, views, and synonyms with the user's User ID as owner; and
 d. Create the following JEPES subdirectories in the user's *jepes* directory, which is defined in the UNIX environment variable called JEPES_USER_DIR:
    1. *oplans*, which contains users' export files,
    2. *user_sql*, which contains users' SQL query files,
    3. *user_rpt*, which contains subdirectories that store users' SQL report files, and
    4. *data*, which contains users' text files; i.e., old WWMCCS text files, Requirements Generation text files.

Before entering the JEPES Main Menu, a user must select the security classification for the session.

5.3   Execution Procedures

This section provides information necessary for producing the various reports, spreadsheets, graphs, and text files. This information includes required and optional inputs, helpful hints, possible pitfalls, and guidance on execution of functions. Highlighted notes provide helpful hints for running JEPES. Each function includes a figure that indicates the menu structure within that function. Another figure also may be included within the function description that indicates the inputs and outputs. It will usually portray the data input tables required for the Ada program to produce the desired outputs. Intermediate tables also may be portrayed. Another use for these figures is to provide assistance in understanding the errors and warnings that may be generated. This aspect is discussed in Section 5.4. The legend for these figures are shown in Figure 5.3-1.

When a user logs on to JEPES (refer to Section 3.1 for initiating JEPES), the main menu will appear. Under the Engineering menu, select "Deliberate" to access the following six functions: Utilities, Database Maintenance, Requirements Generation, Requirements Analysis, Reports/Queries, and Support. There are also functions available outside the JEPES, which are discussed in Appendix G.

Note: The TUG still corresponds to JEPES PC Version 3.0; however, the screens are similar and the process flow remains the same. The big difference between JEPES PC Version 3.0 and JEPES GCCS Version 4.0 is that the F-Keys are different and the latest version uses a mouse to activate commands, rather than the keyboard. The TUG is still helpful for the novice JEPES user.

5.3.1   Utilities

See Figure 5.3.1-1 for an overview of this function.

5.3.1.1 Import Version 6 Database

This function uses the ORACLE import capability to import a Version 6.0 export file into the ORACLE Version 7.0 database. This function **MUST** be used when importing an OPLAN from the JEPES PC Version 3.0 into the JEPES GCCS Version 4.0. Any existing JEPES tables and indexes will be dropped and recreated. Table and index creation reports are written to the user's *jepes* directory; i.e., *jepes.log, jepesind.log*. The user is then prompted to enter the ORACLE Version 6 export file name. This export file must reside under the user's *jepes* directory in the subdirectory called *oplan*s. For the remaining ORACLE import information, the user can press "Enter" to activate the default values. At this point, all tables in the export file are imported into the JEPES database. The Geoloc_Tab table is dropped and the Geoloc_Tab view is created, which is a view of the GCCS Geographic_Location table. The JEPES synonyms are created.

5.3.1.2 Import Version 7 Database

This function imports the entire JEPES database listed in Table 5.3.1.2-1. The tables are first dropped, then data are imported into the JEPES database. The tables are recreated during the import process. Existing text files (see Table 5.3.1.2-2), which were created by the previous OPLAN will be deleted. The export file; i.e., the file being imported, must exist in the user's *oplans* subdirectory and have *.jep* for the extension. The export file must have been created using the JEPES GCCS Version 4.0. A user can obtain a list of existing export files before executing the import function. See the TUG, reference b, for more information.

5.3.1.3 Import Independent

This function imports the plan-independent tables listed in Table 5.3.1.3-1. The tables are first dropped, then the data are imported into the JEPES database. The tables are recreated during the import process. Existing text files (see Table 5.3.1.2-2), which were created by the previous OPLAN will be deleted. The export file; i.e., the file being imported, must exist in the user's *oplans* subdirectory and have *.ind* for

JEPES Tables

Ada Program

Text File

Document

Display

Manual
Input
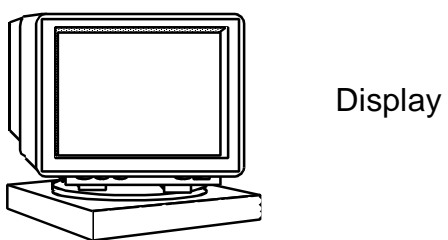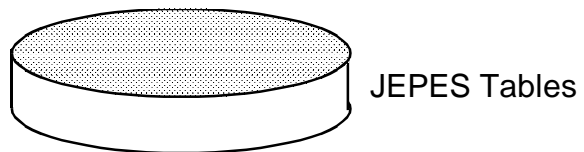
Figure 5.3-1. Legend of Ada Figures
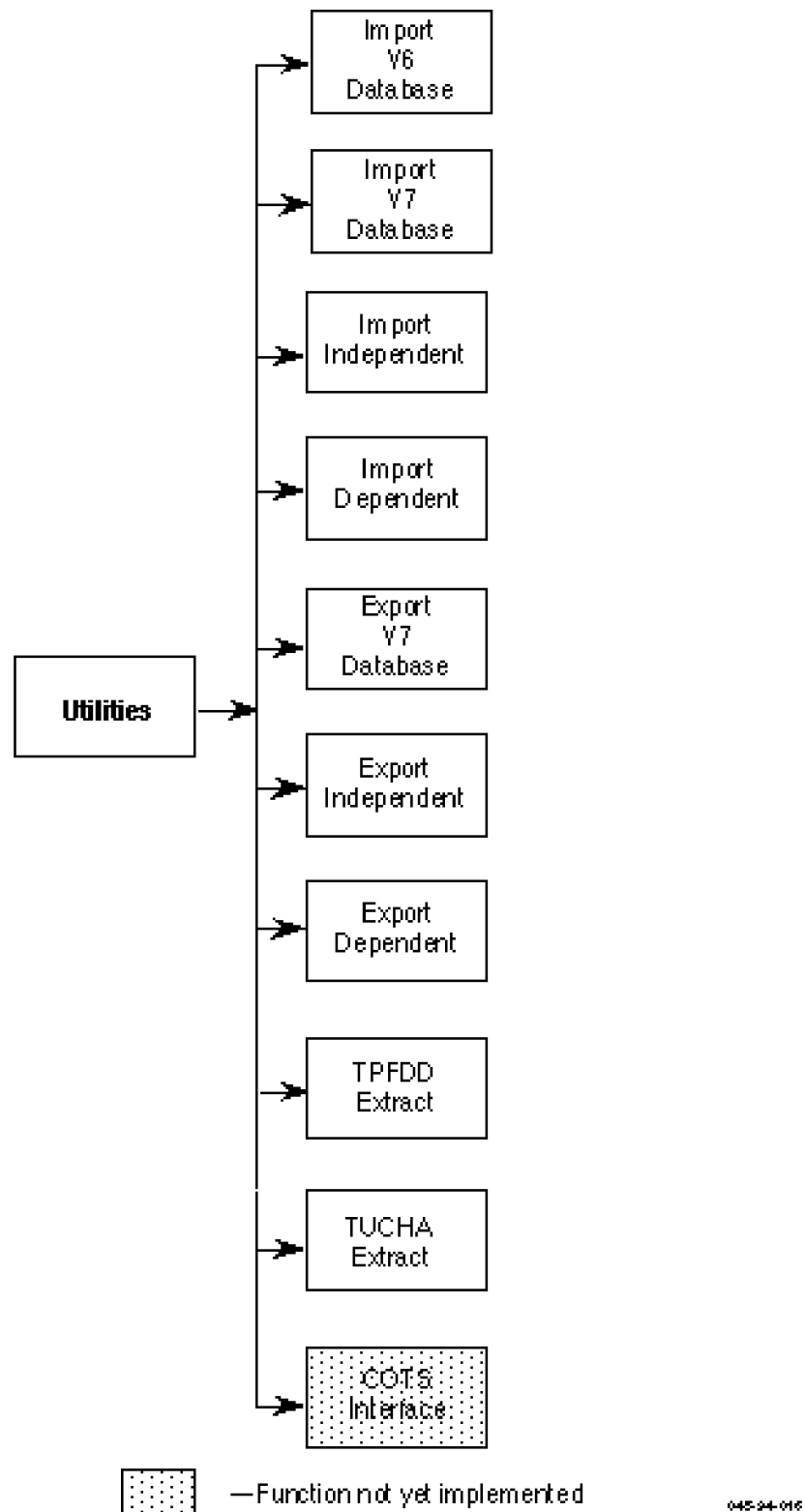
Figure 5.3.1-1. Utilities

Table 5.3.1.2-1. JEPES Database (1 of 2)

JEPES Database
Aggregated_Asset
Asset
Attrition_Factor
Avail
Backup_Supply
Base_Complex
Base_Fac_Construction_Policy
Base_Location
Base_Sum
Cargo_Aggregation_Period
Climatic_Factor
Component
Component_Exception
Construction_Capability
Deployed_Eng_Sensitive_Unit
Destination_Location
Engineering_Support
Engineering_Unit_Capability
Equipment_Planning_Factor
Equipment_Type
Facility_Category
Facility_Category_Substitute
Facility_Component
Facility_Requirements
General_Planning_Factor
Keys
LOGSAFE_Interface
LSA_Export

Table 5.3.1.2-1. JEPES Database (2 of 2)

JEPES Database
LSA_Interface
LSA_Requirements
Non_Unit_Cargo
Operation
Originating_Location
Phase_In_Efficiency
Planner_Input_Requirements
Plan_Fac_Construction_Po licy
Plan_Sum
POD_Location
POE_Location
Preproj
Pre_Project
Pre_Unscheduled_Project
Project
Req_Analysis_Tracking
Scheduled_Project
Skill_Sub
S_P_Tab
Time_Period
Unit_Equipment
Unit_Type
Unscheduled_Project
War_Damage_Factor

Table 5.3.1.2-2. Text Files Created by JEPES

Text Files Created By JEPES that reside in JEPES_USER_DIR
Bybase.txt
Equipmnt.txt
People.txt
Planinp.txt
Totpop.txt
Unitallo.txt
Unschdld.txt
Schdld.Txt
Satisfd.txt
logsafe.Txt
lsa.Txt
data/Bybase.txt
data/Equipmnt.txt
data/People.txt
data/Planinp.txt
data/Totpop.txt
data/Unitallo.txt

Table 5.3.1.3-1. Plan-Independent Tables

Plan-Independent Tables
Component
Engineering_Unit_Capability
Equipment_Planning_Factor
Equipment_Type
Facility_Category
Facility_Component
Facility_Requirements
General_Planning_Factor
Unit_Equipment
Unit_Type

the extension. A user can obtain a list of existing export files before executing the import function. See the TUG, reference b, for more information.

5.3.1.4 Import Dependent

This function imports the plan-dependent tables listed in Table 5.3.1.4-1. The tables are first dropped, then data are imported into the JEPES database. The tables are recreated during the import process. Existing text files (see Table 5.3.1.2-2), which were created by processing the previous OPLAN will be deleted. The export file; i.e., the file being imported, must exist in the user's *oplans* subdirectory and have *.dep* for the extension. A user can obtain a list of existing export files before executing the import function. See the TUG, reference b, for more information.

Table 5.3.1.4-1. Plan-Dependent Tables

Plan Dependent Tables
Asset
Attrition_Factor
Backup_Supply
Base_Complex
Base_Fac_Construction_Policy
Base_Location
Climatic_Factor
Deployed_Eng_Sensitive_Unit
Engineering_Support
Facility_Category_Substitute
Operation
Phase_In_Efficiency
Planner_Input_Requirements
Plan_Fac_Construction_Policy
Skill_Sub
Time_Period
War_Damage_Factor

5.3.1.5 Export Version 7 Database

This function creates an export file that contains the entire JEPES database (see list in Table 5.3.1.2-1). The new file name can contain up to a maximum of eight characters and must have *.jep* for the extension. The export file will overwrite any existing file with the same name. The new export file will reside in the user's *oplans* subdirectory.

5.3.1.6 Export Dependent

This function creates an export file that contains the plan-dependent tables (see list in Table 5.3.1.4-1). The new file name can contain up to a maximum of eight characters and must have *.dep* for the extension. The export file will overwrite any existing file with the same name. The new export file will reside in the user's *oplans* subdirectory.

5.3.1.7 Export Independent

This function creates an export file that contains the plan-independent tables (see list in Table 5.3.1.3-1). The new file name can contain up to a maximum of eight characters and must have *.ind* for the extension. The export file will overwrite any existing file with the same name. The new export file will reside in the user's *oplans* subdirectory.

Note: The export files can be large and take up considerable disk space. Any unneeded export files should be removed or downloaded to a tape or floppy disk.

5.3.1.8 TPFDD Extract

This function imports data from the JOPES Core database into the Deployed_Eng_Sensitive_Unit table. The user is prompted to enter the OPLAN ID. The OPLAN ID must exist in the GCCS Oplan table, and the User's ID and the OPLAN ID must exist in the GCCS Oplan_Access table. Data from the GCCS Oplan_Force_Rqmt table, the Oplan_Force_Rqmt_Loc table, and the Geographic_Location table are input into the JEPES Deployed_Eng_Sensitive_Unit table. After the import is complete, a listing of rejected records are displayed. The rejected records will reside in the OPLAN ID *.rej*, e.g., *1500t.rej* for OPLAN ID *1500t* file in the user's *jepes* directory. Besides the reasons listed in the *.rej* file, TPFDD records will be rejected if the following fields are null: Movement Requirement's ID, UTC, Authorized Personnel, Service Code, ULC, RDD at the destination, and LAD at the POD. Also, any records with providing organization codes of I, K, L, O, R, S, X, 1, 0, or null and parent ID Code of A, P , X, or null are rejected.

5.3.1.9 TUCHA Extract

This function imports data from the JOPES Core database into JEPES tables. The user is prompted to enter the OPLAN ID. The OPLAN must exist in the GCCS Oplan table, and the User's ID and the OPLAN ID must exist in the GCCS Oplan_Access table. Data from the GCCS Unit_Type table and Oplan_ Force_Rqmt table are input into the JEPES Unit_Type table. Data from the GCCS Unit_Type table and Unit_Type_Cargo_4th table are input into the JEPES Unit_Equipment table. A listing of the number of records inserted into Unit_Type table and Unit_Equipment table is displayed. Any TUCHA records with null UTCs, Service codes, Unit Names, or Authorized Personnel are not stored into JEPES tables.

5.3.2   Database Maintenance

Two implemented functions are discussed below. The third function, COTS Interface, is shown in Figure 5.3.2-1 but has not been implemented.
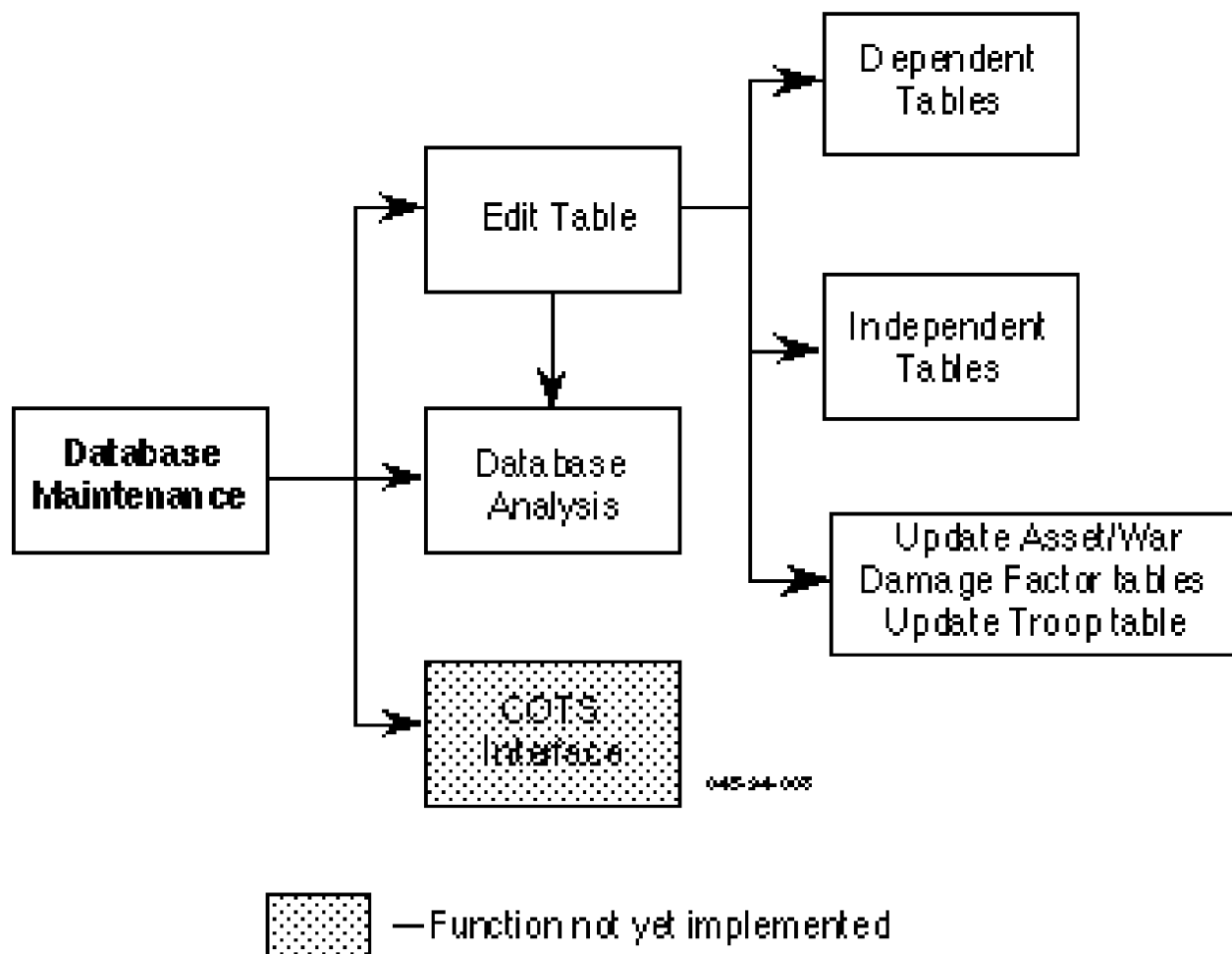
Figure 5.3.2-1. Database Maintenance

5.3.2.1 Edit Tables

This function provides capabilities to add, modify, delete, and query/review the JEPES database for plan-

independent or plan-dependent tables. The query option allows a user to construct a query on all or some of the fields in a table. When a user queries a table, a blank Table Data screen appears for that table. **Note:** A user can qualify retrievals on fields. Appendix H contains a list of JEPES codes, containing values and ranges to be used in facilitating the query. For example, a user who queries on a Constructing Policy code, must enter a number between zero and four. The % (percent) sign can be used as a wildcard, for example when querying Facility Component, a user can enter 11%%% for Servcomp code to retrieve all records that have 11 as the first two digits of the Servcomp code. The Query button, while in the query mode, will retrieve all records. A user can modify all fields for the majority of tables; however, the War_Damage_Factor table, for example, is one table where the Bse_Cmplx_Nbr, Geoloc_Code, DOD_Fac_Cat_Cd, and Asset_Owner cannot be modified.

Table 5.3.2.1-1 provides information on how JEPES helps the user update and/or correct values in the database and maintain the relational aspects of the database. For example, to update the DOD_Fac_Cat_Codes in the database, the user should update the (independent) Facility_Category table. This action will cause automatic updating of 12 other tables. To add Bse_Cmplx_Nbrs or redistribute Geoloc_Codes associated with specified Bse_Cmplx_Nbrs, the user should work with the Base_Complex and Base_Location tables. In this way, nine other tables will be kept current automatically.

Table 5.3.2.1-2 provides details of what happens with record deletion. The left column lists the table in which a user may delete a record. This action causes additional records to be deleted in the tables listed in the right-hand column. The selection of these additional records is controlled by the values of the data element(s) listed in the center column. Where more than one data element is listed, all values must be matched for a deletion.

Table 5.3.2.1-3 provides the details of what happens with a record insertion. When the user adds the data elements to the Asset table, the same data elements get added to the War_Damage_Factor table. The user is also prompted to add additional information to the War_Damage_Factor table.

JEPES provides checks for database integrity; however, the user is cautioned not to rely completely on JEPES for maintenance of database integrity. The Database Analysis function should be operated after any database editing. In addition, JEPES will check for consistency between tables while in the edit mode (see Tables 3.2.2.3-1 and 3.2.2.3-2) and indicate the database tables checked for the particular menu selection. Also indicated are range values that are checked. Appendix D and H provides range information. In addition, the second portion in Appendix D indicates all tables in which a specified data element may be found.

Table 5.3.2.1-1. Records Updated in a Table (1 of 3)

Tables Updated by User	Data Element(s) Updated By User	Tables Updated By JEPES
Asset	DOD_Fac_Cat_Cd, Asset_Owner	War_Damage_Factor
Base_Complex	Bse_Cmplx_Nbr	Asset
		Backup_Supply
		Base_Fac_Construction_Policy
		Base_Location
		Component_Exception
		Deployed_Eng_Sensitive_Unit
		Engineering_Support
		Planner_Input_Requirements
		War_Damage_Factor
Base_Location	Geoloc_Cd	Asset
		Deployed_Eng_Sensitive_Unit (Destination_Geoloc_Cd)
		War_Damage_Factor
Component	Servcomp_Cd	Facility_Requirements
		Facility_Component
		Planner_Input_Requirements

Tables Updated by User	Data Element(s) Updated By User	Tables Updated By JEPES
Component	Service_Code	Facility_Requirements (Servcomp_Cd set to '???????', Service_Code not updated)
		Facility_Component
		Planner_Input_Requirements (Servcomp_Cd set to '???????', Service_Code not updated)
Equipment_Type	Equipment_Identifier_Code, Service_Code	Equipment_Planning_Factor
		Unit_Equipment
Facility_Category	DOD_Fac_Cat_Cd	Asset
		Base_Fac_Construction_Policy
		Component_Exception
		Engineering_Support
		Equipment_Planning_Factor
		Facility_Category_Substitute (DOD_Fac_Cat_Cd and Substitute_ DOD_Fac_Cat_Cd)
		Facility_Component
		Facility_Requirements
		General_Planning_Factor
		Plan_Fac_Construction_Policy
		Planner_Input_Requirements
		War_Damage_Factor
Facility_Component	DOD_Fac_Cat_Cd, Servcomp_Cd, Using_Service	Planner_Input_Requirements (Servcomp_Cd set to '*******')
Operation	Pln_Idr	Cargo_Aggregation_Period

Tables Updated by User	Data Element(s) Updated By User	Tables Updated By JEPES
Unit_Type	UTC	Unit_Equipment
		Engineering_Unit_Capability
		Facility_Requirements
		Deployed_Eng_Sensitive_Unit

Table 5.3.2.1-2. Records Deleted in a Table (1 of 2)

Records in Tables Deleted By User	Linkage	Records Deleted In Tables By JEPES
Asset	Bse_Cmplx_Nbr, Geoloc_Cd, DOD_Fac_Cat_Cd, Asset_Owner	War_Damage_Factor
Base_Complex	Bse_Cmplx_Nbr	Asset
		Backup_Supply
		Base_Fac_Construction_Policy
		Base_Location
		Component_Exception
		Deployed_Eng_Sensitive_Unit
		Engineering_Support
		Planner_Input_Requirements
		War_Damage_Factor
Base_Location	Geoloc_Cd	Asset
		War_Damage_Factor

Component	Servcomp_Cd, Service_Code	Facility_Requirements (Servcomp_Cd set to '???????', No Records Deleted)
		Facility_Component
		Planner_Input_Requirements (Servcomp_Cd set to '???????', No Records Deleted)
Equipment_Type	Equipment_Identifier_Code, Service_Code	Equipment_Planning_Factor
		Unit_Equipment
Facility_Category	DOD_Fac_Cat_Cd	Asset
		Base_Fac_Construction_Policy
		Component_Exception
		Engineering_Support
		Equipment_Planning_Factor
		Facility_Category_Substitute (DOD_Fac_Cat_Cd or Substitute_DOD_Fac_Cat_Cd)
		Facility_Component
		Facility_Requirements
		General_Planning_Factor
		Plan_Fac_Construction_Policy
		Planner_Input_Requirements
		War_Damage_Factor
Facility_Component	DOD_Fac_Cat_Cd, Servcomp_Cd, Service_Code	Planner_Input_Requirements
Operation	Pln_Idr	Cargo_Aggregation_Period
Unit_Type	UTC	Unit-Equipment
		Engineering_Unit_Capability
		Facility_Requirements
		Deployed_Eng_Sensitive-Unit

Table 5.3.2.1-3. Records Inserted in a Table

Records Inserted In Table By User	Data Element(s) Inserted	Records Inserted In Table By JEPES
Asset	Bse_Cmplx_Nbr, Geoloc_Cd, DOD_Fac_Cat_Cd, Asset_Owner	War_Damage_Factor
Base_Complex	Bse_Cmplx_Nbr	Base_Fac_Construction_Policy, Backup_Supply

5.3.2.1.1   Updating Base_Complex and Base_Location Tables (Rebasing)

As previously noted in Tables 5.3.2.1-1 through 5.3.2.1-3, when Base_Complex and Base_Location tables are updated other JEPES tables are also updated. JEPES will display alert screens that provide more information to the user. The following describes these updates in more detail:

a.   Add a BCN to the Base_Complex Table. When a user adds a BCN to the Base_Complex table and if the Primary Geoloc code for the new BCN is being used by another BCN in the Base_Location table, an alert screen will be displayed, asking the user to confirm. If the user says "yes" to updating the Geoloc code, the following updates will occur:

1.   The Base_Location table will be updated to the new BCN for the specified Geoloc code.
2.   The Asset table will be updated to the new BCN for the specified Geoloc code.
3.   The War_Damage_Factor table will be updated to the new BCN for the specified Geoloc code.
4.   The Deployed_Eng_Sensitive_Unit table will be updated to the new BCN for the Destination Geoloc code.
5.   The Base Population and the Noncombat Population of the Base_Complex table will be updated according to the sum of the troop strengths from the Deployed_Eng_Sensitive_Unit table, with Noncombat Population based on the UTC from the Unit_Type table, which has a Self-Sustainability Code set to 'N.' If no data are found in the Deployed_Eng_Sensitive_Unit table and the user did not enter data for the Base Population and the Noncombat Population, then the Base Population and Noncombatant Population will be set to zero, otherwise they will retain whatever value the user entered.

A second alert screen will then be displayed requesting the user to enter the default Construction Policy code for the Base_Fac_Construction_Policy table. If the user says "yes" to updating the Base_Complex table, the following updates will occur:

1.   New records for the Backup_Supply table will be created for each Support Structure Index (1 through 5) with the Rear Echelon Storage Bases 2 through 5 set to null.

2. New records for the Base_Fac_Construction_Policy table will be created for each DOD Facility Category code with the default Construction Policy code assigned by the user.

3. The user will be reminded to add new records to the Engineering_Support, Planner_Input_Requirements, and Asset tables. The Asset table may not need any new records added if the Geoloc code used comes from an existing BCN (the case of the first pop-up screen).

Note: If the user says "no" to either the first or second pop-up screen, then no tables, including the Base_Complex table are updated. Also, the first alert screen will not be displayed if the Primary Geoloc code assigned to the new BCN is not used as a secondary Geoloc code for another BCN.

b. Delete a BCN from the Base_Complex Table. When the user deletes a BCN from the Base_Complex table, an alert screen will be displayed alerting the user that records carrying the same BCN from the following tables will also be deleted: Base_Location, Planner_Input_Requirements, Deployed_Eng_Sensitive_Unit, Base_Fac_Construction _Policy, Component_Exception, Engineering_Support, Backup_Supply, Asset, and War_Damage_Factor.

c. Update a BCN for the Base_Complex Table. When the user updates the BCN for the Base_Complex table, an alert screen will be displayed alerting the user that records carrying the same BCN from the following tables will also be updated with the new BCN: Base_Location, Planner_Input_Requirements, Base_Fac_Construction_Policy, Deployed_Eng_Sensitive_Unit, Component_Exception, Engineering_Support, Backup_Supply, Asset, and War_Damage_Factor.

d. Add a Geoloc Code to the Base_Location Table. This option can be selected from the JEPES Edit tables menu, or automatically prompted to the user after the user adds a new BCN to the Base_Complex table.

e. Delete a Geoloc Code from the Base_Location Table. When the user deletes a Geoloc code from the Base_Location table, an alert screen will be displayed alerting the user that corresponding records from the Asset and War_Damage_Factor tables will also be deleted.

f. Update a Geoloc Code for the Base_Location Table. When the user updates a Geoloc code for the Base_Location table, an alert screen alerting the user that records carrying the same Geoloc code in the War_Damage_Factor, Deployed_Eng_Sensitive_Unit, Asset tables will also be updated with the new BCN. The Base Population and the Noncombatant Population of the Base_Complex table record will be updated according to the sum of the troop strengths from the Deployed_Eng_Sensitive_Unit table, with Noncombatant Population based on the UTC from the Unit_Type table having a Self-Sustainability code set to 'N.'

5.3.2.2 Database Analysis

This function provides the capability to determine if discrepancies exist between database tables. Results of the analysis will be printed. "No Rows Selected" will be printed if no discrepancies were found. Table 5.3.2.2-1, Database Analysis, indicates the consistency checking performed.

Note: A user should run the database analysis before generating requirements. A user should also run the database analysis after importing TPFDD, TUCHA, and RPI data into the JEPES database. After loading a new OPLAN into the JEPES database and running the database analysis, the JEPES database reindexing should be executed. Refer to Section 5.3.3.3 on reindexing.

Table 5.3.2.2-1. Database Analysis (1 of 3)

Menu Selection	Checks DATA ELEMENT(S) in Table(s)	Exists in Table(s)
Asset	Bse_Cmplx_Nbrs in Asset and War_Damage_Factor	Base_Complex
	DOD_Fac_Cat_Cd in Asset and War_Damage_Factor	Facility_Category
	Geoloc_Cd in Asset and War_Damage_Factor	Base_Location (as Geoloc_Cd)
	Duplicate records for Bse_Cmplx_Nbr, Geoloc_Cd, DOD_Fac_Cat_Cd, and Asset_Owner	
Base_Complex	Bse_Cmplx_Nbrs in Base_Location, Backup_Supply (including Rear Echelon Storage Bases), Base_Fac_Construction_Policy, and Engineering_Support	Base_Complex
Base_Location	Base_Primary_Geoloc in Base_Complex	Base_Location
Equipment_ Planning_Factor	Equipment_Identifier and Service_Code in Equipment_Planning_Factor	Equipment_Type
	Equipment_Identifier and Service_Code in Equipment_Type	Equipment_Planning_Factor
Equipment_Type	Equipment_Identifier and Service_Code from Equipment_Planning_Factor	Equipment_Type

Facility_Category	DOD_Fac_Cat_Cd in Facility_Requirements, Facility_Component, Base_Fac_Construction_Policy, Facility_Category_Substitute, Engineering_Support, Equipment_Planning_Factor, General_Planning_Factor, and Plan_Facility_Construction_Policy	Facility_Category
Facility_ Requirements	Servcomp_Cd and Service_Cd in Facility_Requirements and Facility_Component	Component
	DOD_Fac_Cat_Cd in Facility_Requirements	Facility_Category
Planner_Input_ Requirements	Bse_Cmplx_Nbrs in Planner_Input_Requirements	Base_Complex
	DOD_Fac_Cat_Cd in Planner_Input_Requirements	Facility_Component, Facility_Category
	Using_Service and Servcomp_Cd in Planner_Input_Requirements	Facility_Component
	Servcomp_Cd is not null in Planner_Input_Requirements	
Troop (Deployed_Eng_ Sensitive_Unit)	UTCs in Deployed_Eng_Sensitive_Unit (Deployed Unit)	Unit_Type
	Bse_Cmplx_Nbrs in Deployed_Eng_Sensitive_Unit (Deployed_Unit)	Base_Location and Base_Complex
	Destination_Geolocs in Deployed_Eng_Sensitive_Unit (Deployed_Unit)	Base_Location (as Geoloc_Cd) and Base_Complex (as Base_Primary_Geoloc)
	UTCs of '4%%%' in Deployed_Eng_Sensitive_Unit (Deployed_Unit)	Engineer_Unit_Capability
	Duplicate records for Bse_Cmplx_Nbrs, Destination_Geolocs, Force_Rqmt_Number, Fragmentation_Code and Insert_Code	

Unit_Equipment	UTCs in Unit_Equipment	Unit_Type
	Service_Code and Equipment_Identifier_Code in Unit_Equipment	Equipment_Type
Unit_Type	UTCs in Facility_Requirements, Unit_Equipment, and Engineering_Unit_Capability	Unit_Type

5.3.2.3 Update JEPES Tables

The following subsections describe how to update the tables in the JEPES database maintenance, reference b, Figure 14.2.

5.3.2.3.1   Update Asset and War_Damage_Factor Tables

When a user selects Update Asset/War_Damage_Factor tables option, the Asset and War_Damage_Factor tables will get updated according to the Base_Location table. When the Geoloc code matches between the Asset table, War_Damage_Factor table, and the Base_Location Table, the BCN in the Asset table and the War_Damage_Factor table will be updated to match the BCN in the Base_Location table. If the Geoloc code in the Asset table and/or War_Damage_Factor table does not exist in the Base_Location table, then no update occurs for that Geoloc code.

5.3.2.3.2   Update Deployed_Eng_Sensitive_Unit Table

When a user selects the Update_Deployed_Unit (Troop) table option, the Deployed_Eng_Sensitive_Unit table will be updated; when the Destination Geoloc code matches between the Deployed_Eng_ Sensitive_Unit table and the Base_Location table, the BCN in the Deployed_Eng_Sensitive_Unit table will be updated to match the BCN in the Base_Location table. If the Destination Geoloc code in the Deployed_Eng_Sensitive_Unit table does not exist in the Base_Location table, then no update occurs for that Destination Geoloc code. The Base Population data in the Base_Complex table gets updated with the sum of the troop strength in the Deployed_Eng_Sensitive_Unit table. The Noncombatant Population in the Base_Complex table gets updated with the sum of the troop strengths that have a UTC with an 'N' for Self Sustainability code in the Unit_Type table. If there is no data from the Deployed_Eng_ Sensitive_Unit table for updating Base Population and/or Noncombatant Population, then they will be set to zero.

5.3.2.3.3   Update 4 and 5 Above

When a user selects the Update 4 and 5 Above option. The Asset, War_Damage_Factor, and Deployed_ Eng_Sensitive_Unit tables get updated. See Sections 5.3.2.3.1 and 5.3.2.3.2 for more information.

5.3.3   New OPLAN

5.3.3.1 Operation Table

If a user is generating and analyzing requirements for the first time, the Operation table must be updated before running Requirements Generation. To update the Operation table, the user must do the following:

a.   Select Requirements Generation at the JEPES Main Menu;
b.   Enter the new OPLAN ID at the Requirements Selection screen and select Commit;
c.   Exit Requirements Generation;
d.   Select Reports/Queries at the JEPES Main Menu;
e.   Select Ad Hoc;
f.   Type @*$JEPES_HOME/load/init_op.sql*; and
g.   Enter OPLAN ID when prompted.

Requirements Generation may now be run for the selected OPLAN.

Note: Data from only one OPLAN at a time can be used when running JEPES.

5.3.3.2 JEPES Text Files

Before running with a new OPLAN, a user should move or delete text files, shown below, which were created by running JEPES for a previous OPLAN. This will ensure that data from a different OPLAN

are not introduced into reports, JEPES tables, etc. If JEPES import is used to input the new OPLAN, then the text files are deleted at that time (see Section 5.3.1.2).

a.   From the user's *jepes* directory remove the following:
Equipmnt.txt
Unitallo.txt
People.txt
Totpop.txt
Bybase.txt
Planinp.txt
Unschdld.txt
Schdld.Txt
logsafe.Txt
Satisfd.txt
lsa.Txt

b.   From the user's *data* subdirectory remove the following:
Equipmnt.txt
Unitallo.txt
People.txt
Totpop.txt
Bybase.txt
Planinp.txt

5.3.3.3 Reindexing

The database indexes should also be reset before running with a new OPLAN. To reset the indexes the user

should do the following:

Note: Reindexing should be executed after the importing of a new OPLAN and the Database Analysis function has been executed.

5.3.4   Requirements Generation

5.3.4.1 Select Requirements

Before executing the Requirements Generation function a user must select one or more types of facility requirements to be generated. Currently, JEPES can generate requirements for unit allocated, planner facility, population, and base requirements. See Figure 5.3.4-1.

Note: Unit-allocated type of facility requirements should be run separately. Unit-allocated requirements access the same records of the Deployed_Eng_Sensitive_Unit Table as the Population requirements. Therefore, running these options together can cause problems.

5.3.4.1.1   Unit-Allocated Requirements

For each troop entry, a number of unit-allocated requirements based on unit facilities and unit equipment may be generated. The *Unitallo.txt* and *Equipmnt.txt* text files are created. One unit-allocated requirement will be generated for each facility required by a unit. The unit-allocated facility function uses data from the Facility_Requirements table, Unit_Type table, Base_Complex table, Deployed_Eng_Sensitive_Unit table, and Facility_Category table to generate the requirements. The Unit-Allocated Equipment function uses data from the Unit_Equipment table, Backup_Supply table, Base_Complex table, Base_Facility_Construction_Policy table, Equipment_Planning_Factor table, Deployed_Eng_Sensitive_Unit table, Facility_Category table, Facility_Requirements table and Unit_Type table. Unit-allocated facility and equipment requirements will be generated for any unit assigned to bases that have a unit-allocated construction policy of "build for all units." Unit-allocated facility requirements will be generated for noncombat units only assigned to bases for which they have a unit-allocated construction policy of "build for noncombat units" and a Self Sustainability code set to noncombat.

5.3.4.1.2   Planner Facility Requirements

This requirement encompasses the Civil Engineer planner input requirements. The *Planinp.txt* text file is created. One Planner Input Requirement is generated for each Planner Input record. The planner

requirements model uses data from the Base_Complex table and Planner_Input_Requirements table to generate the requirements. The Constructing service will come from the Planner_Input_Requirement table unless it is set to null, then Constructing service will come from the Base Owner in the Base_Complex table.

Note: A user should not attempt to create requirements for planner facilities if the Construction Policy Code in the Base_Fac_Construction_Policy is set to four ("Do not build, but assess war damage").
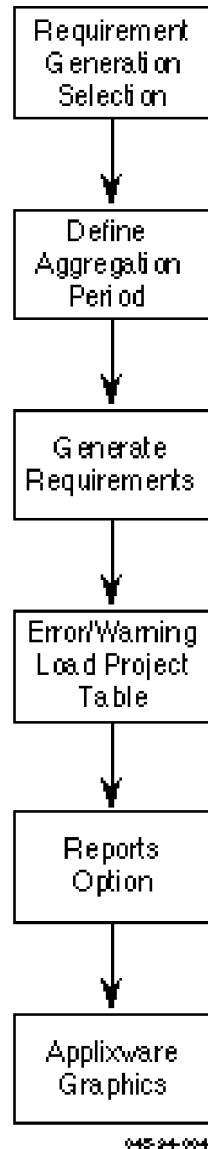
Figure 5.3.4-1. Requirements Generation

5.3.4.1.3 Population Requirement

This requirement provides facility requirements based on two separate calculations:

    a.   TOTPOP Requirements. Facilities generated under this calculation are those facilities required at a base complex whose planning factors depend on total troop strength at the base complex, e.g., POL operations laboratory.

    b.   Base-Resident Population (People) Requirements. The facility requirements for all troops shown deployed or in-place at a base complex, comprise the people requirements at a base complex.

The *People.txt* and *Totpop.txt* text files are created. The people requirements model uses data from the General_Planning_Factor table, Backup_Supply table, Base_Complex table, Base_Facility_Construction_ Policy table, Deployed_Eng_Sensitive_Unit table, and Facility_Category table. The TOTPOP requirements model uses data from the Base_Complex table, Base_Facility_Construction_Policy table, General_Planning_Factor table, and Facility_Category table. People and TOTPOP requirements are generated if Construction Policy is set to "build for all" or "build for noncombat." For TOTPOP requirement, population will be base population if the construction policy is set to "build all" and noncombat population for construction policy set to "noncombat." Echelon Planning Factor (1) or Echelon Planning Factor (2), from the General_Planning_Factors table, which will be used for calculating the facility quantity required.

5.3.4.1.4 Base Requirements

Base requirements are those facilities required for use at each base complex without regard to troop population or equipment, e.g., a weather station. The *Bybase.txt* text file is created. The base requirements model uses data from the Base_Complex table, Base_Facility_Construction_Policy table, General_Planning_Factors table, and Facility_Category table. One base requirement is generated for each Base Complex used by the Services specified in each General Planning Factor record. Base requirements are generated if Base Construction Policy is set to "build for all" or "build for noncombat." Facility Quantity Required gets set to either Echelon Planning Factor (1) or Echelon Planning Factor (2), from the General_Planning_Factors table.

5.3.4.2 Define Aggregation Period

A user can define the time periods into which the requirements are grouped. This information is used in generating the requirements generation graphics. Refer to Section 3.3.1.3.2 for further information.

5.3.4.3 Generate Requirements

After a user commits the aggregation period, the option to exit before generating requirements is given and an approximate completion time is shown. If the user decides to proceed, JEPES will call the Ada code (*tjepes.x*) to generate the requirements. The Ada code will access the appropriate tables and create the text

files (*Unitallo.txt*, *Equipmnt.txt*, *Planinp.txt*, *People.txt*, *Totpop.txt*, *Bybase.txt*) depending on type of facility requirements selected. The text files are located in JEPES_USER_DIR. Figure 5.3.4.3-1 shows the interface with the JEPES tables, the Ada code, and the output reports and graphics.

5.3.4.4 Display Warnings/Errors

Any warnings/errors generated by the Ada code (*tjepes*) can be either displayed or printed. See Appendix C for more information on errors and warnings and a list of most errors.

5.3.4.5 Load Project Table

If the user enters "yes" to load requirements data into the Project table, then the text files (*Unitallo.txt*, *Equipmnt.txt*, *Planinp.txt*, *People.txt*, *Totpop.txt*, *Bybase.txt*) generated by the Ada code will be loaded into an empty Project table. For any requirements not selected, previously generated requirements will be used. Selecting the "yes" option will also copy text files into the user's *data* subdirectory for use in later runs. The Project table will need to be loaded for generating reports and graphs.

5.3.4.6 Generate Printed Reports

The user can print reports on all projects or a selected base complex. The reports list the facility requirements generated for recent or previously generated requirements. Section 3.3.1.3 details the Requirements Generation reports.

5.3.4.7 Generate Graphs/Spreadsheets

The user can generate graphs and spreadsheets using Applixware. The user can generate graphs for the four options. Option 1 (Base Population Data) will generate the base population from the Base_Complex table. Option 2 will generate troop strength information grouped by requirements aggregation period. Option 3 will generate time-phased requirements for an OPLAN and up to four DOD Facility Category codes. Option 4 will generate time-phased requirements for a BCN and up to four DOD Facility Category codes. Section 3.3.1.3.2 describes the graphics and spreadsheets.

5.3.5   Requirements Analysis

See Figure 5.3.5-1 for an overview of the functions.

5.3.5.1 Identify OPLAN

The user must specify OPLAN and can specify the Mobilization Day (M-DAY). An OPLAN **MUST** be entered to generate and analyze requirements. The OPLAN must be the same as that identified in Requirements Generation. M-Day will default to zero if not specified. The maximum range is 180 days.
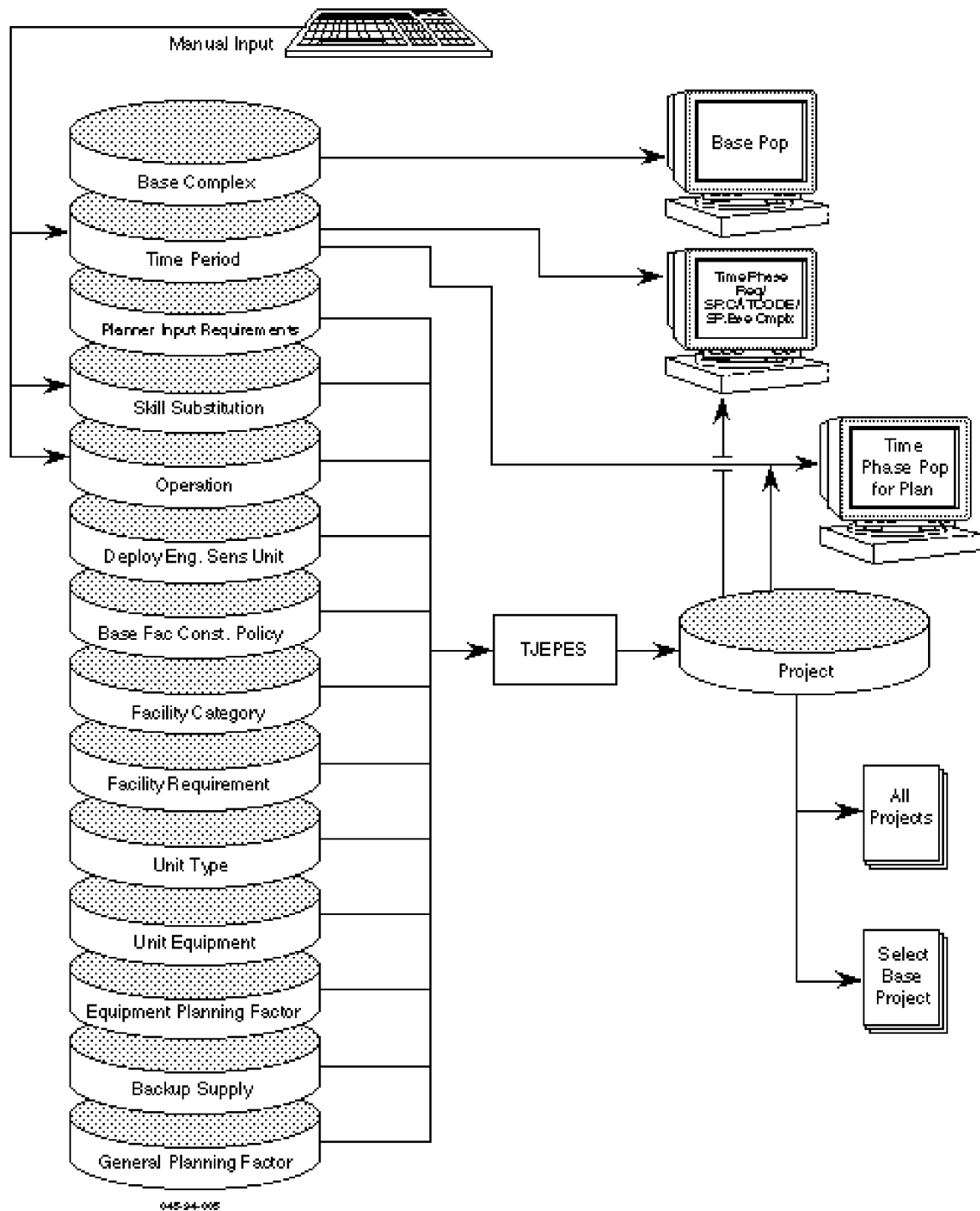
Manual Input

Base Complex

Time Period

Planner Input Requirements

Skill Substitution

Operation

Deploy Eng. Sens Unit

Base Fac Const. Policy

Facility Category

Facility Requirement

Unit Type

Unit Equipment

Equipment Planning Factor

Backup Supply

General Planning Factor

045-94-005

Base Pop

TimePhase Req/ SP.CATCODE/ SP.Base Cmplx

Time Phase Pop for Plan

TJEPES

Project

All Projects

Select Base Project

Figure 5.3.4.3-1. Requirements Generation (Ada)

5-31
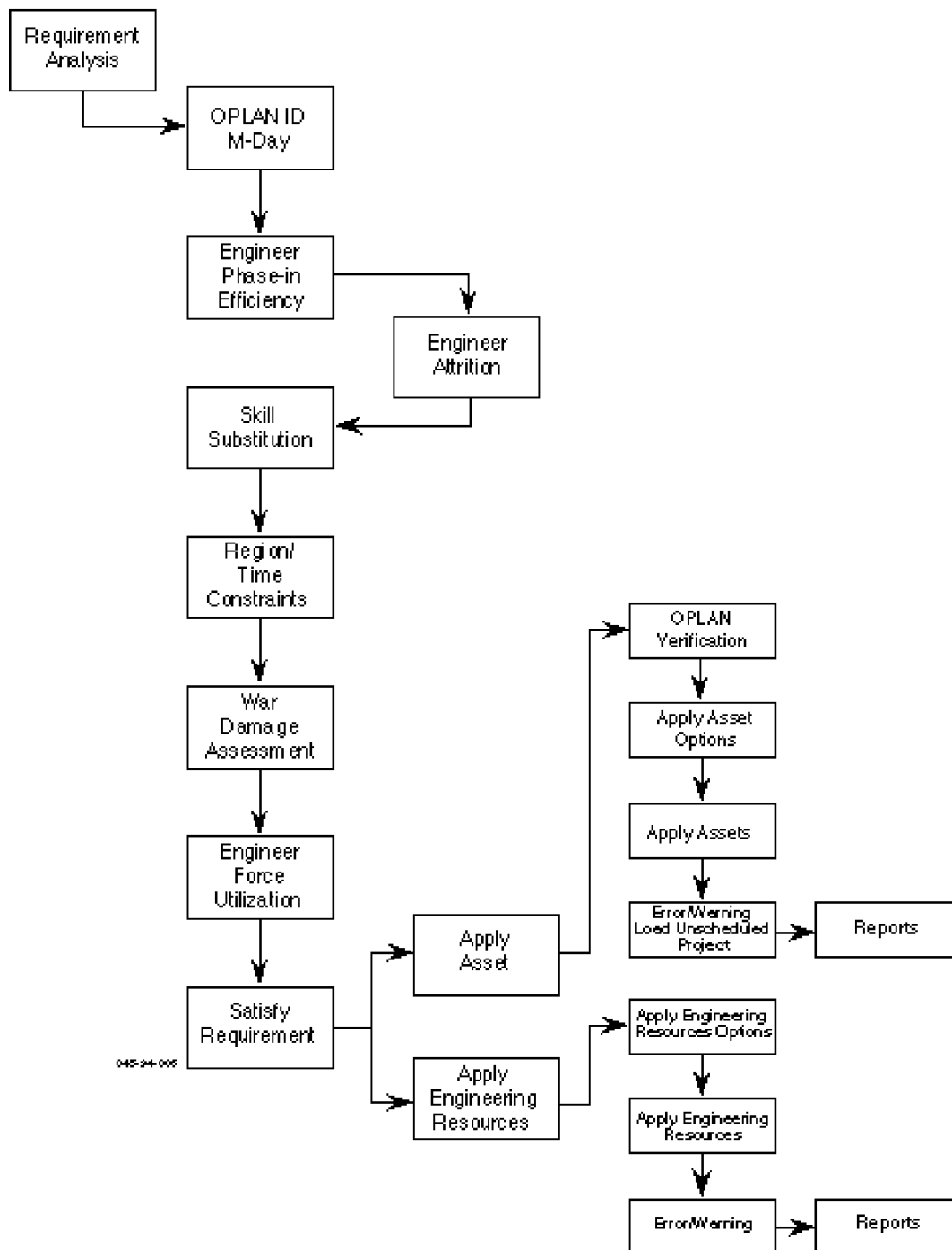
Figure 5.3.5-1. Requirements Analysis

5.3.5.2 Engineer Phase-In Efficiency

The user can specify the working capability of incoming engineer units for a specified number of days. The phase-in efficiency percentages are used in determining engineering capabilities. The Phase-In_Efficiency table allows the user to assign percentages of effectiveness for engineering resources for a 1- to 8-day phase-in period after engineers have arrived. These effectiveness factors will normally begin at some value below 100 percent and gradually build up to a maximum of 100 percent. For example, on arrival day the engineer may be only 50 percent effective, by the 3rd day 75 percent effective, until 100 percent is achieved either on or before the 8th day.

5.3.5.3 Engineer Attrition

The user can specify the time periods and rates at which engineers are lost due to increased hostilities or accidents. The attrition factor can be applied to a period of up to 180 days with no more than eight attrition period/attrition factor combinations. If the first engineering unit arrives at the base complex after the last day of attrition, then no personnel attrition is applied.

5.3.5.4 Skill Substitution

The user can determine the skill factor if one type of engineer is substituted for another for the three types of engineers: vertical, horizontal, and other. The percentages are defaulted to zero. Skill substitution is attempted if there are remaining unsatisfied requirements. Each engineer is then assigned a substitution factor when assigned to perform engineering duties of the other two categories. For example, a vertical engineer may be assigned a horizontal skill substitution factor of .85, meaning that engineer is 85 percent as effective as a horizontal engineer when performing these duties.

5.3.5.5 Region/Time Constraints

The user can limit the requirements analysis information for up to four regions and/or a single time period. The time period default is the OPLAN time period, and region defaults to include all OPLAN areas. This entry permits the user to limit the retrieval of information reported on the analysis report listings for the Apply Assets and Apply Engineering Resource options. The Base_Complex table contains the Region code for a BCN. On the second screen, the user has the option to generate a report. The report displaying construction requirements is similar to the report generated when running Apply Engineering Resources option.

5.3.5.6 War Damage Assessment

The user can determine whether to consider the effects of war damage. The default is no. War damage assessment may be considered for a period of up to 31 days. The Apply Assets function will assess war damage to facility assets and generate emergency war damage repair requirements. U.S. engineering resources will be applied to war damage repair of new construction.

Note: War damage **MUST** be set to "off" if Construction Policy Code is set to 4 ("do not build, but assess war damage") in the Base_Fac_Construction_Policy table.

5.3.5.7 Engineering Force Utilization

A user must decide where to use U.S. engineering manpower. The user will specify whether engineers are to be used only at the base complex where they are assigned or throughout the entire region in which the base complex is located.

5.3.5.8 Apply Assets

This function will apply existing assets to generated requirements. Before generating available assets, the user must enter the OPLAN ID. The user must then decide which asset sources to apply: U.S., host nation, and/or facility asset substitution (leased facility assets). The user can then decide whether to use austere components for remaining unsatisfied projects.

After the user enters the appropriate information, JEPES will then execute the Ada code (*ajepes.x*) to determine the satisfied and unsatisfied projects, see Figure 5.3.5.8-1. War damage is also considered if the user entered "yes" for assessing war damage. If specified, the austere components are applied to the remaining unsatisfied projects. For any requirements still not fulfilled, the Apply Assets function will determine the component(s) used to construct the facility, construction start and stop dates, and the Services responsible for building the facility. Services substitution can occur when selecting components. All Coast Guard requirements shall use Navy components. All Joint Services requirements shall use Army components. Marine Corps shall use Navy components, if there are no Marine components available. The satisfied and unsatisfied projects are documented in the *Unschdld.txt* file. The satisfied projects will have an "S" for Satisfied for Constructing Service.

The user can then display or print errors and warnings. Refer to Appendix C for more information concerning the errors and warnings. The user can also decide whether to load the unscheduled project data into the Unscheduled_Project table. All projects that do not have an "S" for Constructing Service will be added to the Unscheduled_Project table and all projects with an "S" will be added to the S_P_Tab table (Scheduled Project), if this is selected.

5.3.5.9 Apply Engineering Resources

The Apply Engineering Resources function assigns available engineering resources to remaining unsatisfied projects. The first screen specifies whether any parameters mentioned in Sections 5.3.5.2 through 5.3.5.7 had been defined for this particular JEPES run. If not, previously defined parameters will be used.

The next screen will specify whether the user wants to consider climatic factors that influence construction capability. The user can either use the information from the Climatic_Factors table or specify a single fixed climatic factor to apply for all requirements. The climatic factor is used to decrease engineering capability due to environmental or climatic conditions that exist in the region or
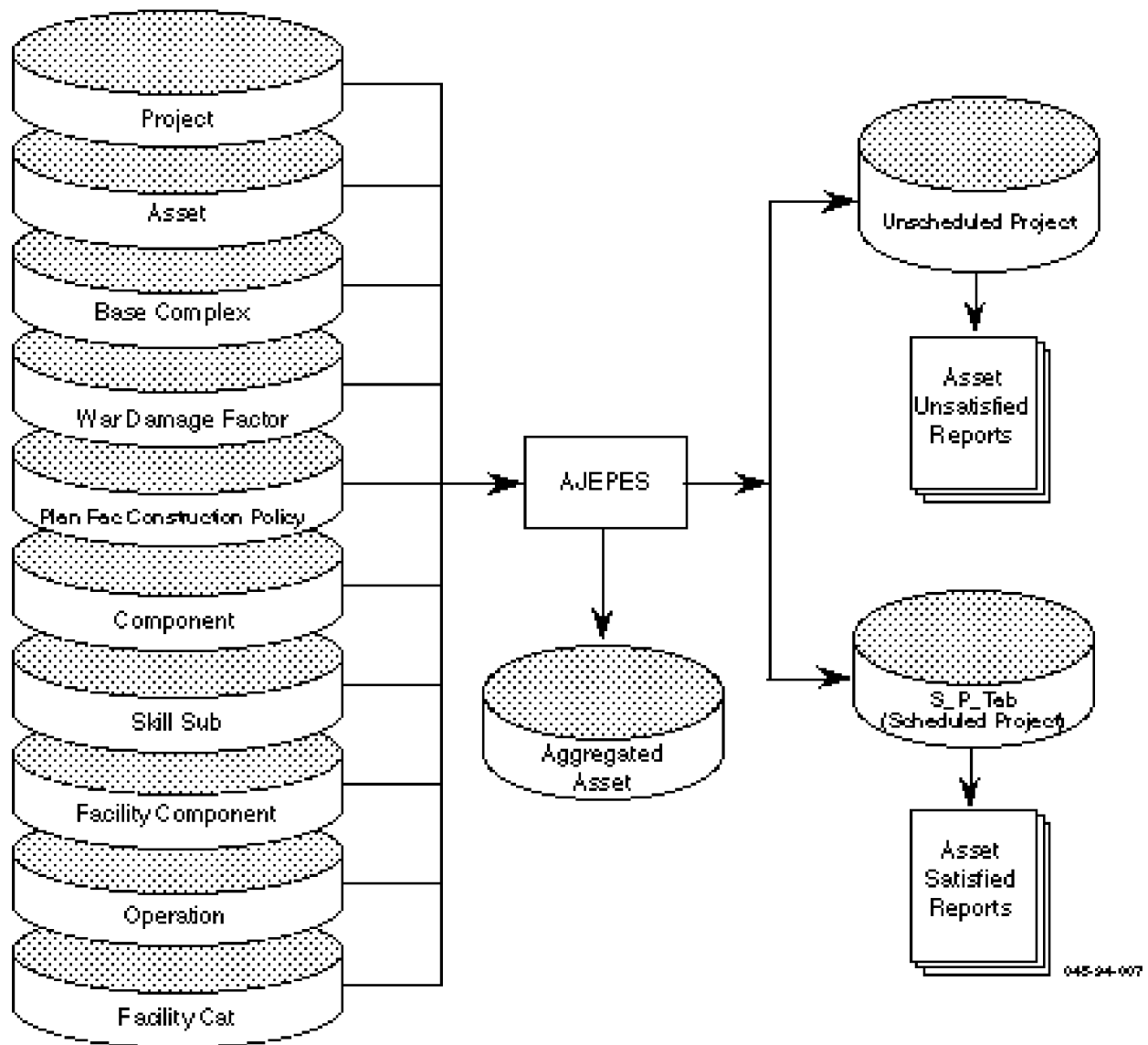
Figure 5.3.5.8-1. Requirements Analysis - Apply Assets (Ada)

OPLAN area where the unit is located. The engineer's efficiency rate is divided by the climatic factor. Therefore, the severer the climate the larger the climatic factor. The user then specifies what resources to apply to the unsatisfied projects. The U.S. engineering capabilities are always applied, and the user has the option to also use host nation and civilian contractor engineering capabilities.

After the user enters the applicable information, JEPES executes the Ada code *(bjepes.x)* to determine engineering capabilities and adjusts the manpower available, see Figure 5.3.5.9-1. The process takes into account phase-in efficiency, climatic factors, engineer attrition, and the areas where engineers are utilized.

If user specified, the host nation and/or civilian contractor engineering resources will be assigned to unsatisfied construction requirements by calling the Ada program *(cjepes.x)*, see Figure 5.3.5.9-2. The Engineering_Support table contains host nation and contractor engineer support information.

Requirements that are assigned to the host nation contractor will be loaded into the Scheduled_Project table, and remaining unsatisfied requirements will be in the Unscheduled_Project table. Any construction requirements assigned to the host nation/contractor will not be considered for assignment to the U.S. engineering resource.

Note: The JEPES program will display "Applying Host Nation Resources" regardless of what a user inputs for engineering resources. However, the JEPES program will immediately exit the Apply Host Nation Engineering Resources program without generating any information if the user did not select Host Nation Resources.

After applying Host Nation Engineering Resources, the U.S. Engineering Resources will be applied by calling the Ada program *(djepes.x)*, see Figure 5.3.5.9-3. War damage for completed construction and skill substitution will be considered, if specified by the user. Both satisfied construction requirements and satisfied war damage repair requirements are written out to the *Schdld.Txt* file. The war damage repair requirements have a number assigned to the subproject number. The project type (see Appendix H, Table H-10, Project Type Codes) distinguishes between war damages, which are repair types, and nonwar damage projects, which are not repair types. Information from the *Schdld.Txt* gets loaded into the Scheduled_Project table.

Note: Resources can only be used for requirements up to 180 days. A project in the Unscheduled_Project table must have a required completion date of 179 or less. A constraint error in the Ada code will occur when applying U.S. engineering resources if the required completion date is greater than 179. One possible method to work-around this error is to delete from the Unscheduled_Project table all records that have a Required Completion Date greater than 179.

5.3.5.10   Display Errors/Warnings

Errors/Warnings can be displayed for both Apply Assets and Apply Engineering Resources. See Appendix C for more information on errors and warnings.
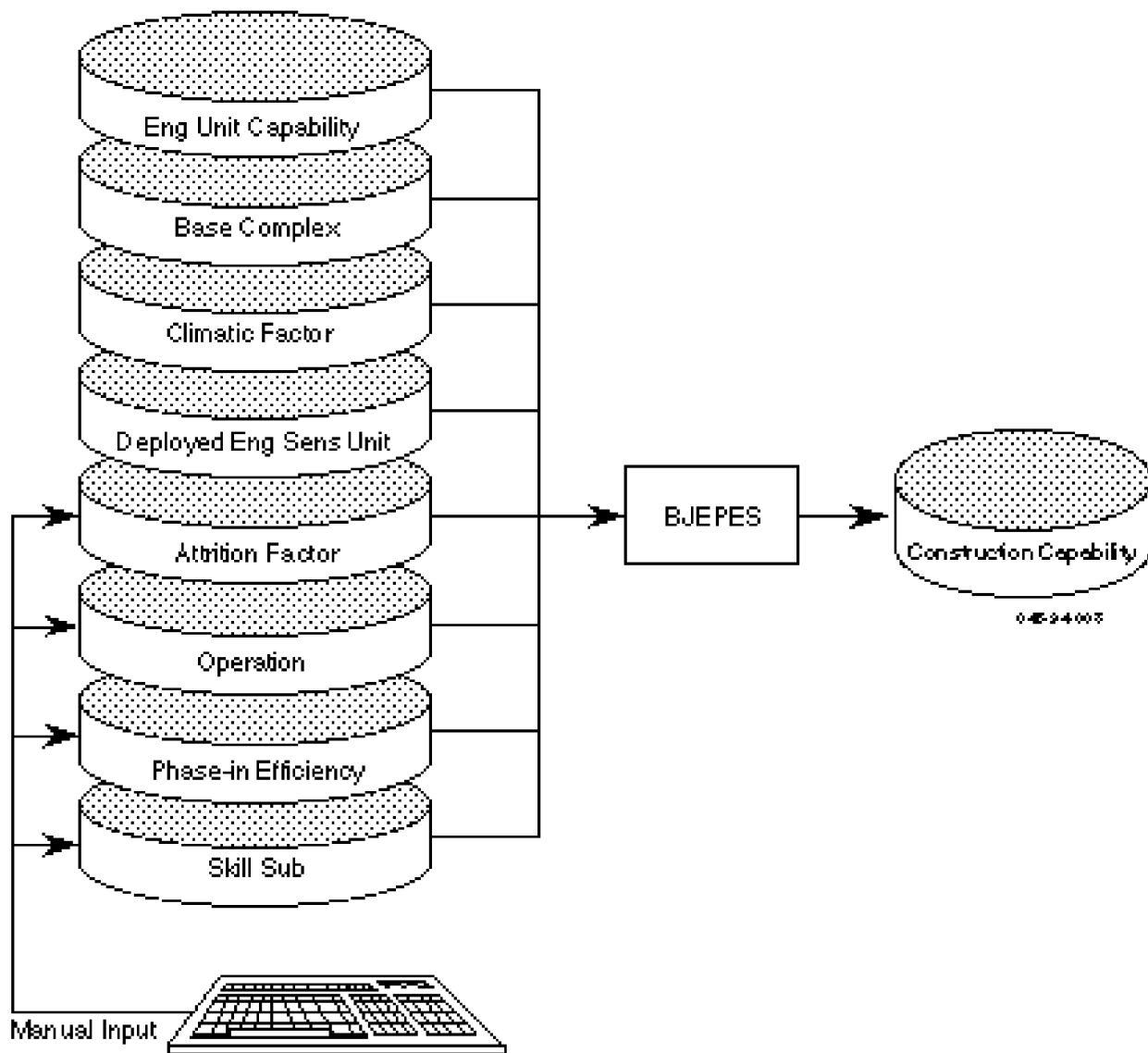
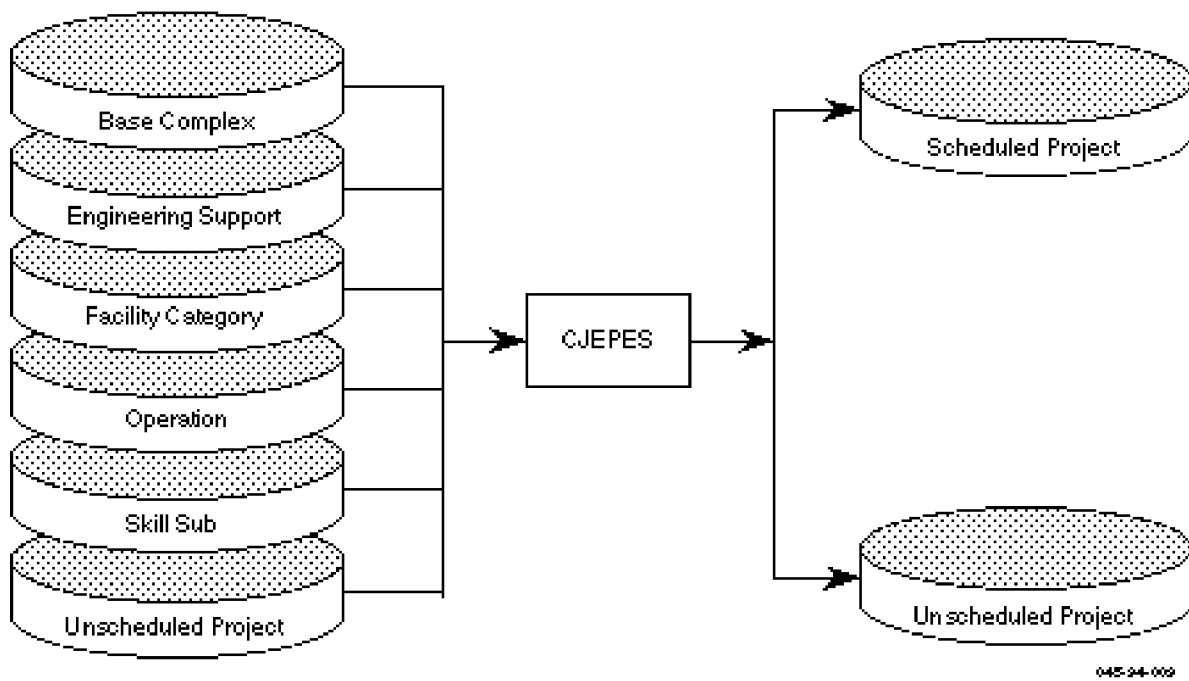Figure 5.3.5.9-1. Requirements Analysis - Determining Construction Capability (Ada)

Figure 5.3.5.9-2. Requirements Analysis - Applying Host Nation and/or
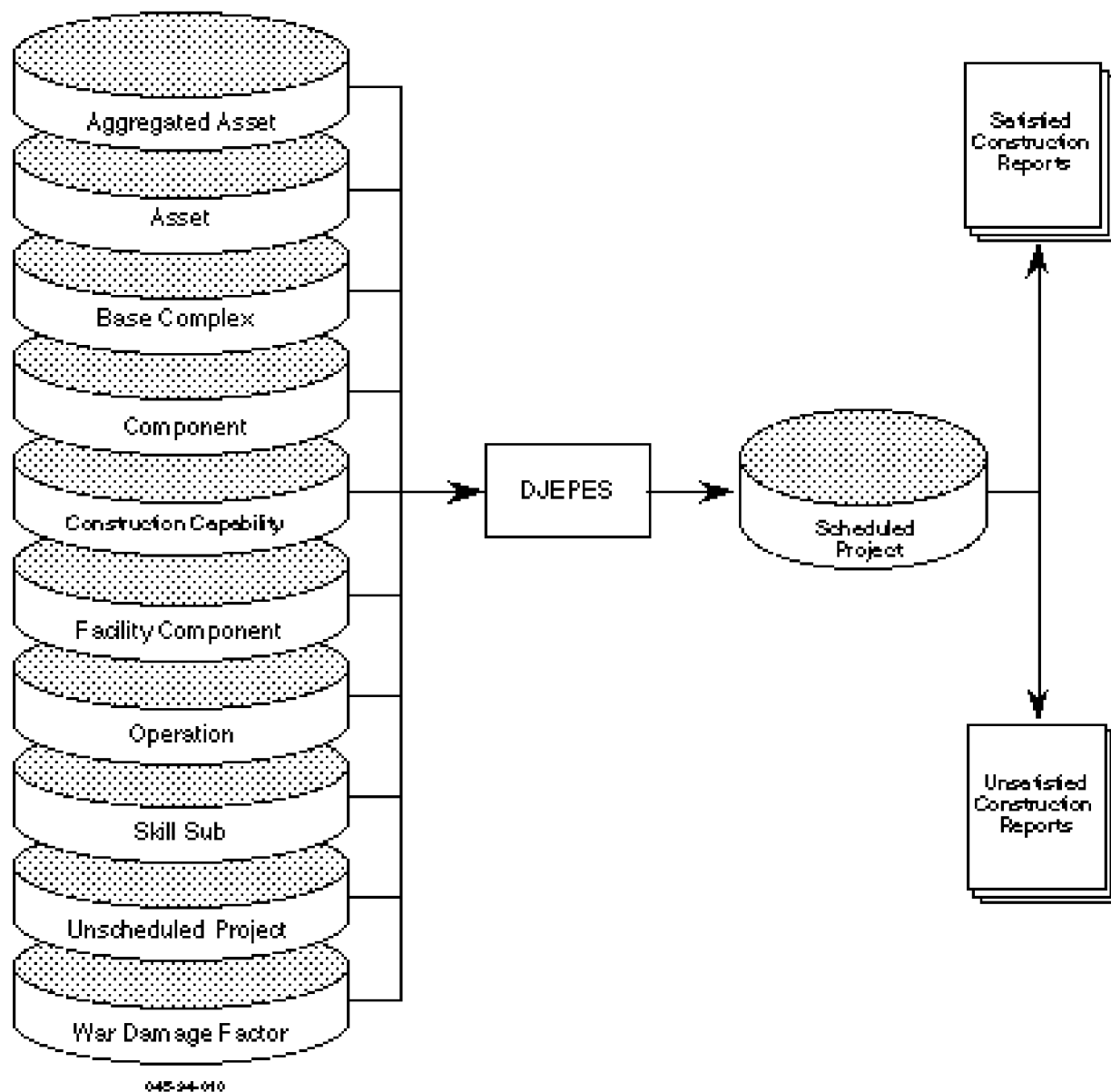Contractor Engineering Resources (Ada)

Figure 5.3.5.9-3. Requirements Analysis - Applying U.S. Engineering Resources (Ada)

5.3.5.11 Generate Reports

Reports can be printed to list all satisfied and unsatisfied requirements. Time and region limits will be taken into account if specified by the user. Refer to Section 3.3.1.4.1 for more information.

5.3.6 Reports

This option allows the user to produce printouts and/or graphs for previous requirements.

5.3.6.1 Standard Reports

The Requirements Generation option allows the user to reproduce reports and graphs for the Requirements Generation with the option of changing the aggregation periods. These reports reflect what is in the Project table. Sections 5.3.4.6 and 5.3.4.7 describe these functionalities in more detail. The Apply Asset and Apply Engineering Resources options allow the user to reproduce reports for the Apply Assets function and the Apply Engineering Resources function with the option of defining a different region and time constraints. The Apply Asset reports reflect what is in the Unscheduled_Project table and the S_P_Tab table, and the Apply Engineering reports reflect what is in the Scheduled_Project table. Refer to Sections 5.3.5.5 and 5.3.5.11 for more information. Figure 5.3.6.1-1 shows an overview of these three functions.

5.3.6.2 User Reports

This option allows the user to execute user-defined reports. These reports must reside in user-defined subdirectories under the user subdirectory called *user_rpt*. When selecting this option, the list of user-defined subdirectories will be displayed. After selecting the subdirectory, a list of the report files residing in that subdirectory will be displayed. The user can then select a report to generate its output.

5.3.6.3 Ad Hoc Queries

This option allows the user to temporarily exit JEPES and enter the SQL*Plus environment. The default directory will be the user's subdirectory called *user_sql*. The user can issue SQL query commands or execute a predefined query file that resides in *user_sql*. The user should type "Exit" to return to JEPES. A user can also enter the UNIX environment by typing "host" at the SQL*Plus command line. The user should type "Exit" to return to SQL*Plus.

5.3.7 Support

Figure 5.3.7-1 shows an overview of the Support functions.

5.3.7.1 Non-Unit Cargo

The user can generate non-unit cargo information and then create a text file called *logsafe.Txt* to be used in LOGSAFE. The *logsafe.Txt* is created by Ada code (*ljepes.x*), see Figure 5.3.7.1-1. The non-unit
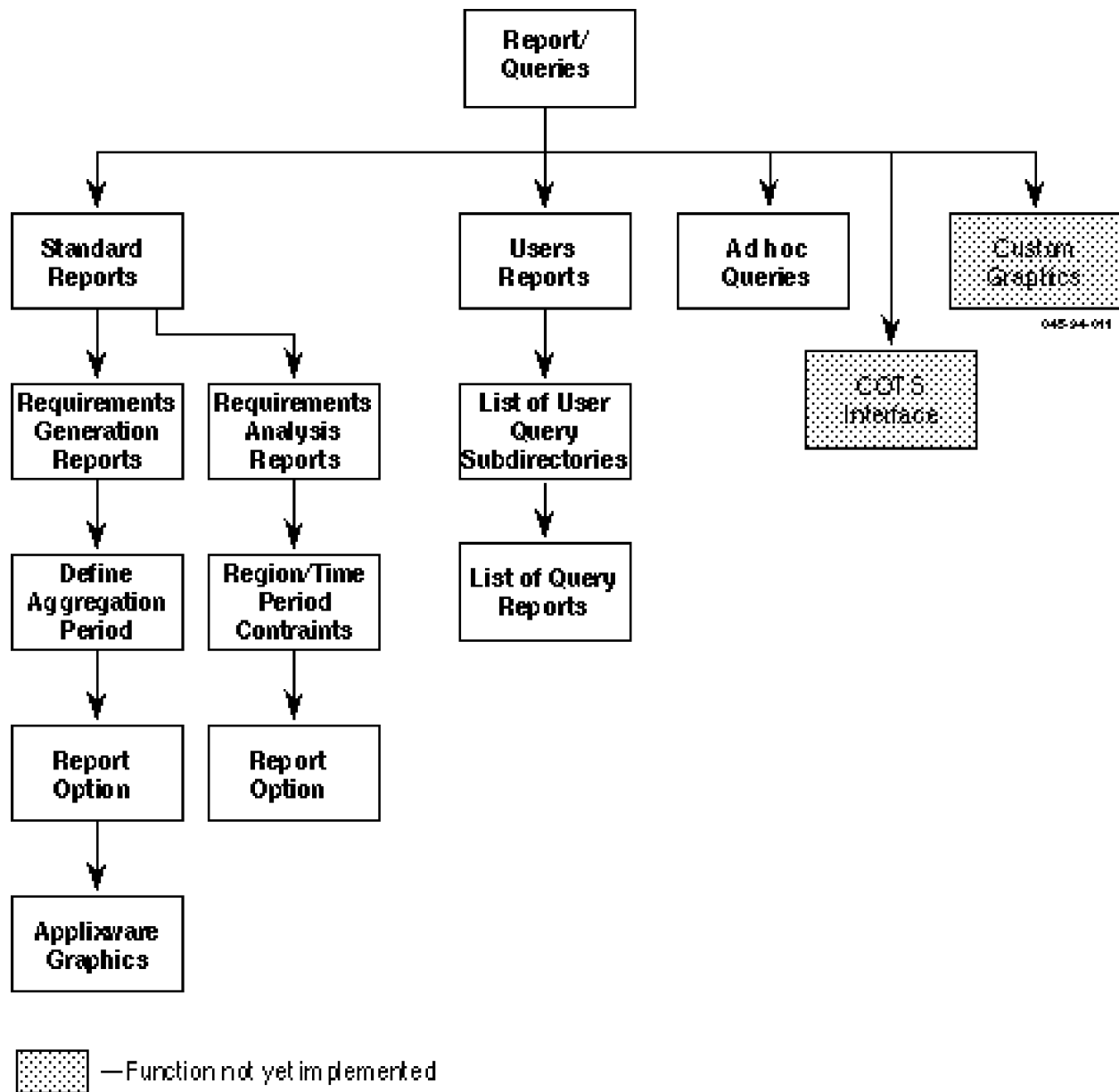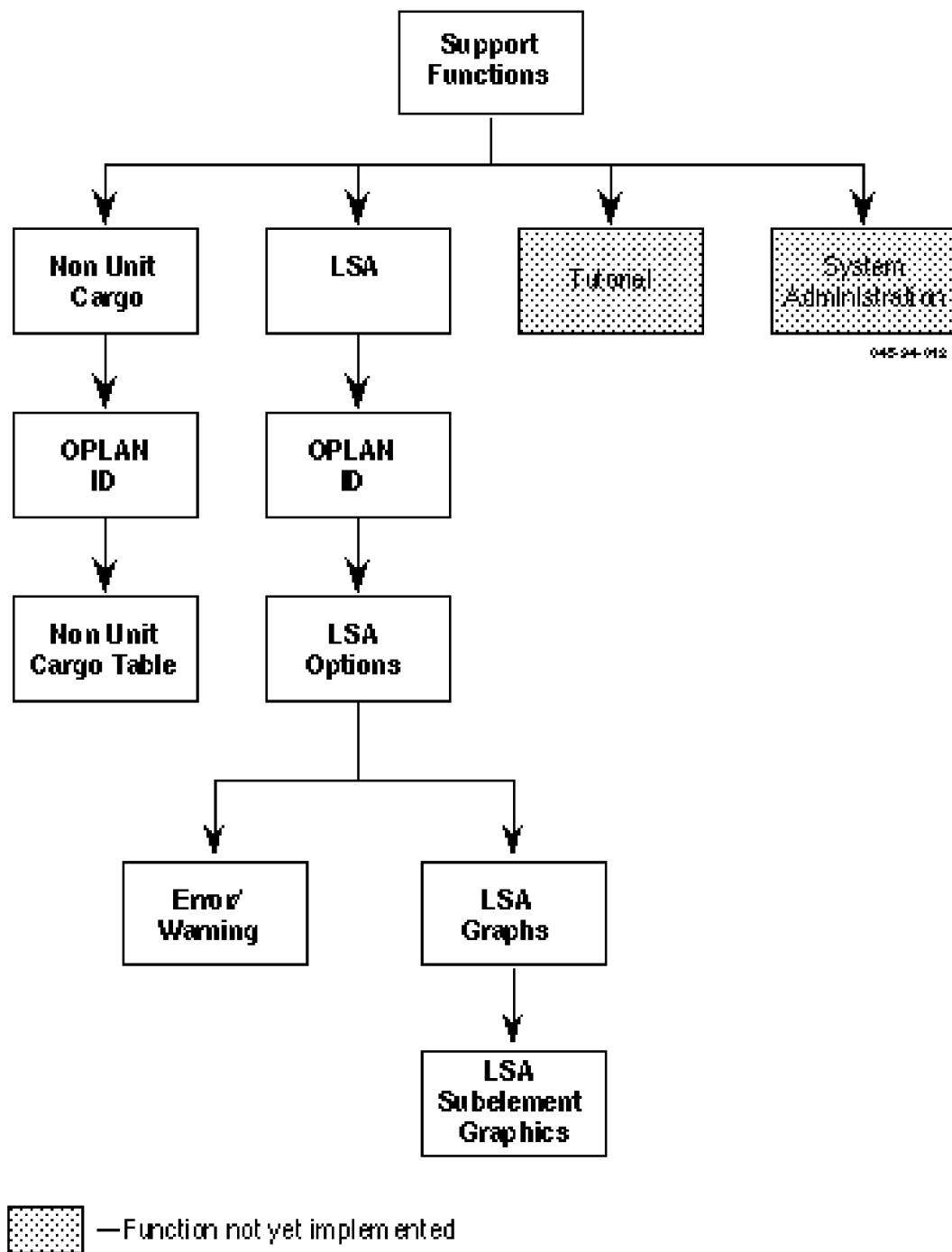
Figure 5.3.6.1-1. Reports

```
        ┌──────────────┐
        │   Support    │
        │  Functions   │
        └──────────────┘
```

Support Functions → Non Unit Cargo, LSA, Tutorial, System Administration

Non Unit Cargo → OPLAN ID → Non Unit Cargo Table

LSA → OPLAN ID → LSA Options → Error/Warning, LSA Graphs → LSA Subelement Graphics

045-94-012

☐ —Function not yet implemented
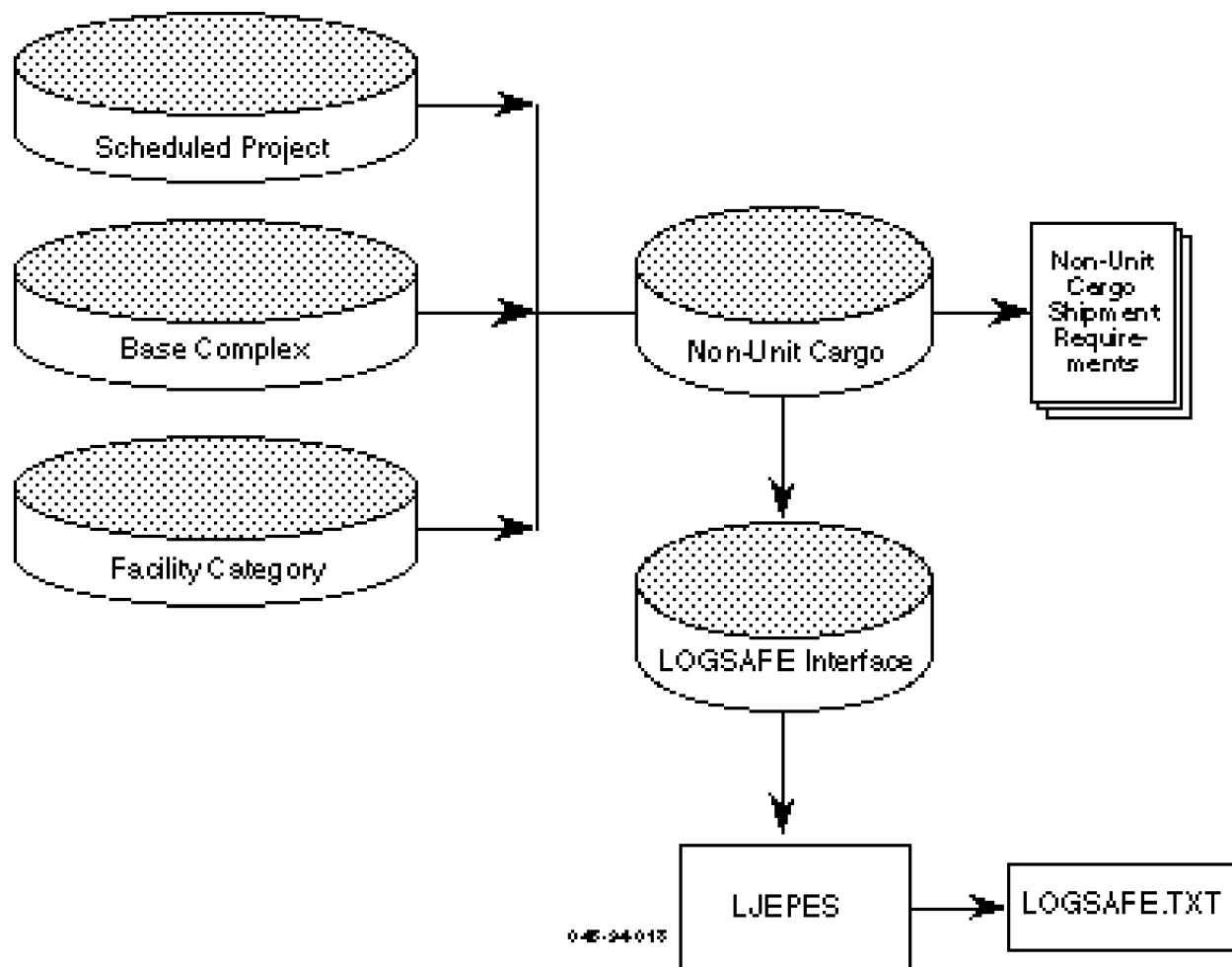
Figure 5.3.7-1. Support Functions

Figure 5.3.7.1-1. Non-Unit Cargo (Ada)

cargo data contains STON and MTON transportation requirements. Components necessary for project construction are examined to determine weight, and then aggregated by Services to yield STON and MTON transportation requirements for a selected period of time and BCN. As described in the TUG, reference b, the non-unit cargo information is updated before storing the information into the *logsafe.Txt* file. Also, a user can generate a list of non-unit cargo shipment requirements as indicated at the JEPES Non-Unit Cargo screen and the OPLAN Identification screen (for Non-Unit Cargo).

Note: Requirements Generation and Requirements Analysis will need to have been executed before generating non-unit cargo information. In addition, the type of facility requirements generated and satisfied will be represented.

5.3.7.2 LSA

The Logistics Sustainment Analysis function (LSA) provides assistance to the planner in determining the supportability of a COA/OPLAN based on the availability of the individual infrastructure subelements. There are six infrastructure subelements that are considered: airfields, POL storage/distribution, seaports, non-POL storage/distribution, troop support, and utilities. JEPES LSA function will generate the LSA information for each subelement and display the information into six detail and two summary graphs. The infrastructure information is created in a text file called *lsa.Txt*. This information can be passed on to the LSA system.

After entering the OPLAN ID, the user can select three options. The first option creates LSA data. The Ada code (*sjepes.x*) will be called. The user must create LSA data before generating graphics. If a user specified this option in a previous run and no new requirements have been generated, the LSA data should still exist and does not need to be regenerated. JEPES will assign construction components to the asset-satisfied requirements and outputs the scheduled output file into the *Satisfd.Txt* file. After the information is determined, the user has the option to display error and warning listings. See Appendix C for more information on error and warning listings.

Note: Requirements Generation and Requirements Analysis will need to have been executed before creating LSA data.

The second option provides LSA graphics for the six infrastructure subelements. LSA data must be generated before creating the graphics. The first graphic displays the percentage of the forces sustainable as a function of time. The second graphic displays the minimum percent available for each subelement. The third graphic provides the user with the option to display the percent available for each of the subelements as a function of time. For more information concerning the graphic output refer to Section 3.3.1.5.2.

The final option produces the *lsa.Txt* file, which can be passed to the LSA system. The Ada code (*gjepes.x*) is called to create the *lsa.Txt* file. It contains information concerning the percentage of deploying forces that the existing infrastructure can sustain. For information concerning the LSA text file, refer to Section 3.3.1.5.2. Figure 5.3.7.2-1 shows the interface between JEPES tables, the Ada code, and the output text files and graphics.
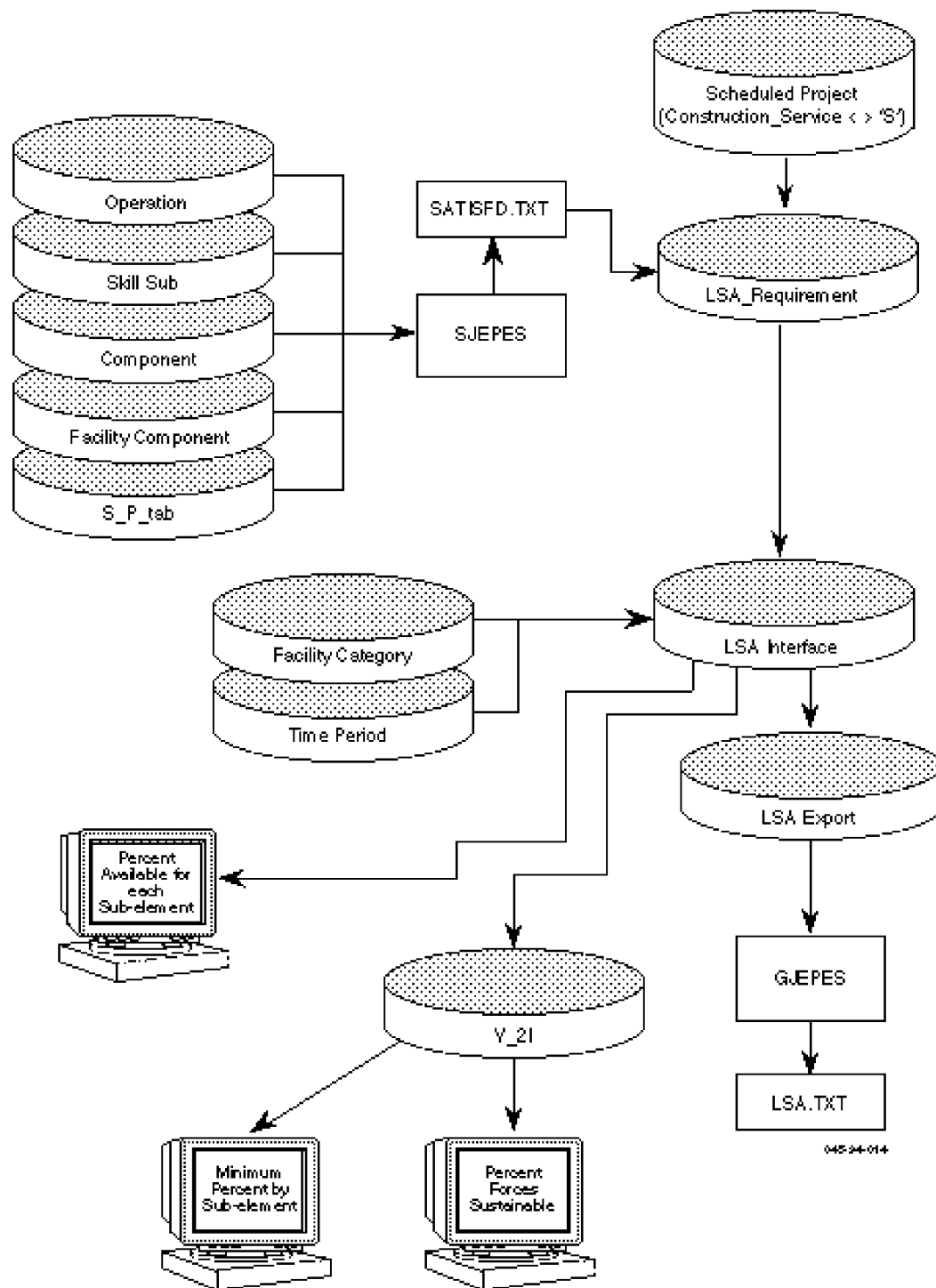
Figure 5.3.7.2-1. LSA (Ada)

5.4   Recovery and Error Correction Procedures

After executing Requirements Generation, Requirements Analysis, Non-Unit Cargo, and LSA functions, the user is prompted to print or display warning and error messages. These messages are generated by Ada code and are in logs file (*error.log, warning.log*). Warnings occur when data are missing, data are invalid, etc., and the Ada code may or may not abort. If the Ada code cannot recover from the warning, the problem will also be written to the errors file. For problems that cannot be recovered, the error file will contain "processing terminated." Errors occur when something not normal happens, such as problems accessing the JEPES database, missing JEPES data, or an Ada constraint error. The error messages get propagated up to the highest level of the Ada code. For example, a Requirements Generation function error's highest level is *tjepes*. The first error message in an error file shows where the error in the Ada code actually occurred. Depending on the error, a user may be able to determine if there is an error in the JEPES database. Figures 5.4-1 and 5.4-2 show examples of error and warning messages, respectively. Appendix C lists some possible error messages and suggested methods of recovering from the error. Since only the user knows what data and options were input that may have caused the error, the recovery methods can only be a guide. Figures that indicate the specific Ada programs also indicate the tables in use; thus, these figures may be used as a guide to determine which data tables may be suspect.

```
94/02/13 14:11:25    Processing begins
Error: Operation View.Convert(1.0)
      Invalid Asset Source Indicator
Pln Idr          : DEMO DB
Generate Rqmts Type:     NNNNYNNN
Error: Operation View.Fetch(1.0)
      Invalid data in current tuple
Error: Run Data.Read A Record (2.0)
      Database value out of range
Error: Requirements Generator.Initialize(1.1)
      Undefined processing error
Error: Tjepes(1.1)
      Fatal processing error
94/02/13 14  26 Processing completes
```

Figure 5.4-1. Asset Source Indicator Error

```
94/02/15 12:00:36 Processing begins
Warning: Facility Data.Position Of(2.4)
      Facility Category Code not found 132C
Warning: Facility Data.Position Of(2.4)
      Facility Category Code not found 132D
Warning: Facility Data.Position Of(2.4)
      Facility Category Code not found 871A
Warning: Facility Data.Position Of(2.4)
      Facility Category Code not found 871B
Warning: Facility Data.Position Of(2.4)
      Facility Category Code not found 972A
Warning: Facility Data.Position Of(2.4)
      Facility Category Code not found 972B
Warning: Planning Factors Data.General Planning Factors Exist(1.1)
      No general planning factor records found for:
      Planning factor type: PEOPLE and service code: P
Warning: Planning Factors Data.General Planning Factors Exist(1.1)
      No general planning factor records found for:
      Planning factor type: PEOPLE and service code: P
Warning: Facility Data.Position Of(2.4)
      Facility Category Code not found 132C
Warning: Facility Data.Position Of(2.4)
      Facility Category Code not found 132D
Warning: Facility Data.Position Of(2.4)
      Facility Category Code not found 871A
Warning: Facility Data.Position Of(2.4)
      Facility Category Code not found 871B
Warning: Facility Data.Position Of(2.4)
      Facility Category Code not found 972A
Warning: Facility Data.Position Of(2.4)
      Facility Category Code not found 972B
Warning: Planning Factors Data.General Planning Factors Exist(1.1)
      No general planning factor records found for:
      Planning factor type: PEOPLE and service code: P
Warning: Facility Data.Position Of(2.4)
      Facility Category Code not found 132C
Warning: Facility Data.Position Of(2.4)
      Facility Category Code not found 132D
Warning: Facility Data.Position Of(2.4)
      Facility Category Code not found 871A
Warning: Facility Data.Position Of(2.4)
      Facility Category Code not found 871B
Warning: Facility Data.Position Of(2.4)
      Facility Category Code not found 972A
Warning: Facility Data.Position Of(2.4)
      Facility Category Code not found 972B
```

Figure 5.4-2. Warnings (1 of 2)

```
Warning: Facility Data.Position Of(2.4)
      Facility Category Code not found 132C
Warning: Facility Data.Position Of(2.4)
      Facility Category Code not found 132D
Warning: Facility Data.Position Of(2.4)
      Facility Category Code not found 871A
Warning: Facility Data.Position Of(2.4)
      Facility Category Code not found 871B
Warning: Facility Data.Position Of(2.4)
      Facility Category Code not found 972A
Warning: Facility Data.Position Of(2.4)
      Facility Category Code not found 972B
Warning: Facility Data.Position Of(2.4)
      Facility Category Code not found 132C
Warning: Facility Data.Position Of(2.4)
      Facility Category Code not found 132D
Warning: Facility Data.Position Of(2.4)
      Facility Category Code not found 871A
Warning: Facility Data.Position Of(2.4)
      Facility Category Code not found 871B
Warning: Facility Data.Position Of(2.4)
      Facility Category Code not found 972A
Warning: Facility Data.Position Of(2.4)
      Facility Category Code not found 972B
Warning: Planning Factors Data.General Planning Factors Exist(1.1)
      No general planning factor records found for:
      Planning factor type: TOTPOP and service code: A
Warning: Planning Factors Data.General Planning Factors Exist(1.1)
      No general planning factor records found for:
      Planning factor type: TOTPOP and service code: A
Warning: Planning Factors Data.General Planning Factors Exist(1.1)
      No general planning factor records found for:
      Planning factor type: TOTPOP and service code: A
94/02/lS 12:03:51 Processing completes
```

Figure 5.4-2. Warnings (2 of 2)